

REMARKS

By this amendment, applicants have amended the specification to insert appropriate headings therein, as required in numbered section 3 of the office action. Applicants have also amended the claims to more clearly define their invention. In particular, applicants have amended claims 1, 11, 13, 20 and 21 and have canceled claim 29 to eliminate the indefiniteness problems noted by the Examiner in numbered section 5 of the office action. Applicants have also amended claim 1 to recite that the translating means and rotating means are adapted to operate concurrently. See, e.g., page 6, lines 24 - 26 of applicants' specification. Applicants have also added claims 30 - 34 to further define their invention.

Applicants traverse the requirement for a new oath or declaration in numbered section 2 of the office action. The Examiner has objected to the oath or declaration as being defective for not identifying the residence of each inventor. It is noted that the original declaration provides the citizenship of each inventor and the mailing address of each inventor. Since the requirement for the inventors' residences is not a requirement of the statute, and since the inventors' citizenships and mailing addresses have been properly identified, applicants request that the Examiner waive the requirement for the residence information.

In view of the foregoing amendments to the claims, it is submitted all of the claims now in the application comply with the requirements of 35 USC 112, second paragraph. Accordingly, reconsideration and withdrawal of the rejection of claims 1, 3 - 18, 20 - 22, 28 and 29 under 35 USC 112, second paragraph, are requested.

Claims 1, 3, 5 - 7, 13 - 15, 17, 18 and 29 stand rejected under 35 USC 102(b) as allegedly being anticipated by United States Patent No. 4,303,366 to Hinchcliffe et

al (Hinchcliffe '366). Applicants traverse this rejection and request reconsideration thereof.

The present invention relates to an apparatus for unloading containers. As shown, by way of example only, in the drawings of the subject application, trays (10) with open tops and filled with rod-like articles are delivered upright to a tray carriage by a conveyor (14). The tray carriage (18) is mounted on two linear slideways (20) for translational movement. The tray carriage (18) pivotably supports a tray carrier (24) which is provided with clamps (32) arranged to clamp a tray (10), and a release plate (40) which is arranged to cover the open top of the tray. The tray carrier (24) is adapted to rotate a tray held therein through about 180°, while independently and concurrently the tray is translated by virtue of the linear slideways. In use, the filled tray is removed from the conveyor (14) and undergoes, simultaneously, both linear and rotational movement so as to deliver the inverted tray to a hopper device. The release plate (40) is then removed from the open top of the inverted tray and the rod-like articles are delivered into the hopper. When the tray is empty, the tray carriage (18) and carrier (24) move the tray to an intermediate position at which the tray is delivered to a removal conveyor (48) by suitable means (46).

Hinchcliffe et al. '366 disclose two devices for the delivery of cigarettes from open-top trays. The first is a device in which loaded trays (14) are delivered one-by-one by a conveyor (10) onto a platform. The platform lifts the tray slightly and the top of the tray is then clamped between two elements (20). A retractable safety cover plate (22) covers the open top of the tray. The platform (16), clamping elements (20), safety plate (22) and tray (14) are then rotated about an axis parallel to the cigarettes in the tray such that the tray is inverted and positioned over first and second delivery bands (26, 28). The safety plate (22) is retracted and the cigarettes are unloaded

between the two delivery bands. The platform (16) and clamping elements (20) are then retracted, moving the empty tray away from the delivery bands. The tray is then rotated through 180° and released by the platform and clamping elements onto an elevator (38). The elevator then lowers the empty tray onto a removal conveyor (40).

In the second device disclosed by Hinchcliffe et al '366, full trays (200) are carried on a conveyor (202). The trays are provided with a hinged closure member (214) at one side. The full trays are received by a support and an L-shaped bracket (204) which is pivoted at one extremity (206) of an arm of the L-shaped bracket. Each tray in turn is tilted about the pivot (206) upon which the bracket is mounted, and the closure member engages a stop (220) which results in the opening of the trays. Consequently the contents of the tray are unloaded, and are carried away by a stack conveyor (222). When the tray is empty, it is tilted back to its original position and transferred to a removal conveyor.

The Hinchcliffe et al. '366 patent does not disclose a device for the delivery of rod-like articles in which the articles, contained in a tray, may be delivered to a required position by concurrent linear and rotational movement as per the apparatus of amended claim 1. The apparatus of the present invention is capable of moving a tray of rod-like articles with simultaneous rotational and linear components of motion. Further, Hinchcliffe et al. '366 does not disclose a device capable of independent linear and rotational movement. In Hinchcliffe et al '366, the holder of the tray undergoes sequential rotational and translational movement. It is submitted that since the commencement of a particular mode of movement is dependent on a previous mode having been completed, the two movements are linked and cannot therefore be independent. In the present invention, the rotational and translational motions of the tray are independently controlled and are not interdependent. It is

therefore submitted that the present invention is not anticipated by Hinchcliffe et al '366.

Claims 1, 3 and 5 - 8 stand rejected under 35 USC 102(b) as allegedly being anticipated by United States Patent No. 4,575,301 to Lodi et al. Applicants traverse this rejection and request reconsideration thereof.

The Lodi et al. patent disclose an automatic feeder device for feeding cigarettes from trays into a hopper (1) before packing the cigarettes into packs. The device comprises a first conveyor (4) for transporting loaded trays (2') of cigarettes towards the hopper. The loaded trays are transferred from the conveyor onto a tray carrying case (17) provided with an upper retractable lid (20) and mounted by two stud-like shafts on a pair of slides (12) which themselves are mounted on an oblique, longitudinally mounted side-frame (8). The side-frame is arranged to be pivotable about a transverse axis and is positioned such that it has a first upper end above the hopper and a second lower end positioned above a second return conveyor (5). A loaded tray (2') within the tray carry case (17) is pushed by the slides (12) towards the first upper end of the side frame and the hopper. As the tray case approaches the hopper, two toothed pinions (28) mounted on the stud-like shafts engage a pair of toothed racks (29) mounted on the side-frame. The pinions and racks are arranged so that the tray and tray case are inverted as they approach the hopper. When the tray is inverted the retractable lid (20) prevents the contents of the tray from falling out. The upper end of the side frame is then lowered so as to bring the tray closer to the hopper. The retractable lid (20) provided on the tray case is retracted, and the contents of the tray fall into the hopper (1). When the tray is empty, the side-frame (8) is raised and the tray and tray carrier are moved, by way of the slides, back down the side frame (8). The tray is returned to its original

orientation as it moves down the side frame, and is then released by the tray case (17) onto a slide (6) disposed beneath the side frame (8). The tray travels down the slide and is transferred onto a removal conveyor (5).

In Lodi et al., a magazine undergoes contemporaneous rotational and linear movement, in that the magazine, loaded in a tray carry case (17), undergoes linear motion by virtue of the slides (12) and rotational motion by dint of engagement of the toothed pinions (28) with the toothed racks (29). However the rotational motion of the magazine is entirely dependent on the translational motion of the tray carrying case. It should be noted that if the magazine did not undergo linear motion, then the toothed wheels and racks would not cause rotation of the magazine. Thus the linear motion and rotational motion of the magazine are not independently controlled. In the present invention, the rotational and linear motion of the tray are independent, and it is therefore submitted that the present invention is not anticipated the disclosure of Lodi et al.

Claims 1, 3 - 6 and 8 stand rejected under 35 USC 102(b) as being clearly anticipated by United States Patent No. 3,190,478 to Schmermund. Applicants traverse this rejection and request reconsideration thereof.

The Schmermund patent discloses a feeding device for feeding elongated articles into a hopper (96). Magazines (11), filled with the elongated articles, and held in carriers (63) at an oblique angle, are transported by a conveyor (64) to a lift mechanism (66). The lift mechanism serially removes the filled magazines (11) from the carriers (63) and raises them up such that they enter through a base of a frame assembly (1, 2). The frame assembly has separate front (1) and rear (2) parts and a lid member (5), and is rotatably mounted on a transverse axis. A filled magazine, together with the frame assembly (1, 2), is then rotated about the axis, by way of a

co-axial toothed wheel (57) attached to the assembly engaging with a moving toothed rack (56), into a first position such that the lid member is disposed at the base of the frame assembly, the lid member (5) preventing the elongated articles from falling out of the magazine. The magazine and the front part of the frame assembly undergo translational transverse movement in a first direction by way of a slide (19) attached to a conveyor chain (14), which chain engages the front part (1) of the frame assembly. The front part (1) of the frame assembly and the filled magazine are moved to a second position over the hopper, at which point the lid member (5) is removed by a suitable mechanism so as to allow the elongated members held within the magazine to fall into the hopper (96). The slide (19), which is still engaged with the front part (1), is returned to its original position, while the magazine remains at the second position. At the same time, a pair of clip slides (36) are moved into a position at which they may engage the magazine in the second position. When the magazine is empty, the clip slides (36) engage the empty magazine and transport it in the first direction to a third position. At the third position, the magazine is transferred to a removal conveyor by a suitable means.

The Schmermund patent does not disclose a device for the delivery of rod-like articles in which the articles, contained in a tray, may be delivered to a required position by concurrent linear and rotational movement as per the apparatus of amended claim 1. The apparatus of the present invention is capable of moving a tray of rod-like articles with simultaneous rotational and linear components of motion. Further, Schmermund does not disclose a device capable of independent linear and rotational movement. In Schmermund, the holder of the magazine undergoes sequential rotational and translational movement. It is submitted that since the commencement of a particular mode of movement is dependent on a previous mode

having been completed, the two movements are linked and cannot therefore be independent. In the present invention, the rotational and translational motions of the tray are independently controlled and are not interdependent. It is therefore submitted that the present invention is not anticipated by Schmermund.

Claims 9 - 11 stand rejected under 35 USC 103(a) as being unpatentable over Hinchcliffe et al '366, Lodi et al or Schmermund. Applicants traverse this rejection and request reconsideration thereof.

An object of the present invention is to provide an apparatus that is capable of efficiently transferring all lengths and types of rod-like articles from a conveyor to a hopper device in particular avoiding the need to re-engineer substantially or adjust the apparatus when rod-like articles of differing properties or sizes are used.

The device disclosed by Lodi et al. would be not be suited for articles of different lengths, as it would require greater or less translational movement of the magazine carrier to manoeuvre the carrier to the required position over the hopper. Since the rotational and translational motion components are intrinsically linked, any adjustment in the translational distance moved by the carrier would result in additional or less rotational movement. This would result in the magazine being positioned at an oblique angle over the hopper with a concomitant risk of misfeeding the rod-like articles into the hopper. It is notable that Lodi et al. is silent on transporting of articles of differing robustness. The device disclosed by Lodi et al. is only be able to rotate the magazines of articles at a speed which is dependent entirely on the translation speed of the slides. If the articles were delicate then the whole machine would have to be slowed down such that the rotation of the magazine was of a suitable angular speed not to damage the articles within the magazine.

The present invention has the capability to deal with articles of different lengths by rotating the articles at different angular speeds according to their nature. Additionally the ability of the present invention to rotate and translate the articles independently means that the device does not have to be significantly slowed when delicate articles are being transported from the conveyor to the hopper. It is therefore submitted that the present invention is unobvious having regard to Lodi et al.

Furthermore, neither Schmermund nor Hinchcliffe et al. '366 teaches a device with independent concurrent control of the translational and rotational motion of the magazine, so as to allow for the handling of rod-like articles of variable length, or for the angular speed to be varied according to the robustness of the article. Should the devices of Schmermund and Hinchcliffe et al. '366 be adapted to handle articles of a more delicate nature, the transport of the articles would have to be significantly slowed at the point when the magazine or tray was rotated since the devices are not adapted to rotate and translate the magazine simultaneously. Thus, we submit that the present invention is unobvious over the disclosures of Schmermund and Hinchcliffe et al '366.

Claim 16 stands rejected under 35 USC 103(a) as being unpatentable over Hinchcliffe et al '366 in view of United States Patent No. 3,985,252 to Hinchcliffe et al (Hinchcliffe et al '252). Applicants traverse this rejection and request reconsideration thereof.

The patent to Hinchcliffe et al '252 has been cited by the Examiner as allegedly showing various controls used to ensure that the level of articles in a conveying path remains constant with that of the conveyors. However, even assuming, arguendo, the Hinchcliffe et al '252 patent to disclose the feature alleged by the Examiner, nothing in Hinchcliffe et al '252 would have remedied any of the

basic deficiencies noted above with respect to Hinchcliffe et al '366. Accordingly, claim 16 is patentable over the proposed combination of references, at least for the reasons noted above.

Applicants note with appreciation the indication of allowable subject matter in claims 19 and 23 - 27 (see numbered section 13 of the office action), claims 20 - 22, (see numbered section 14 of the office action) and claims 12 and 28 (see numbered section 15 of the office action). However, in view of the foregoing amendments and remarks, it is submitted all of the claims now in the application are in condition for allowance.

Applicants note the Examiner has cited a number of documents as being pertinent to applicants disclosure. However, since these documents were not applied in rejecting claims formerly in the application, further discussion of these documents is deemed unnecessary.

In view of the foregoing amendments and remarks, favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 912.39939X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES

IN THE CLAIMS:

1. (Amended) Apparatus for unloading containers for rod-like articles, comprising:
a carrier for receiving a full container in a receiving position in a first orientation;
and
means for moving the carrier to an unloading position at which the carrier is in a
second orientation, the moving means including means ~~including means~~ for translating
the carrier and means for rotating the carrier, wherein the translating means and
rotating means are independently controlled and are adapted to operate concurrently.

11. (Amended) Apparatus as claimed in claim 1, wherein at least one of the
translating means and the rotating means includes means for moving the carrier to a
preferred position following a stoppage of said apparatus.

13. (Amended) Apparatus ~~for unloading containers of rod-like articles~~ as claimed in
claim 1, said means for moving the carrier to an unloading position being configured
such that said articles are unloaded through an open end of said container, and further
comprising means for conveying unloaded articles away from the unloading position
along a path, wherein the conveying means extend substantially across said open end
at said unloading position except at said path.

20. (Amended) Apparatus as claimed in claim 19, wherein the transition between said first and second phases takes place dependent on a signal from detector means sensing the ~~level~~presence of adjacent articles in or from an unloading container.

21. (Amended) Apparatus as claimed in ~~claim 19 or~~ claim 20, wherein the conveying means includes first conveyor means immediately adjacent the unloading container and second conveyor means downstream of said first conveyor means for conveying away a multi-layer stream of articles.